

# MPEG ENCODER WITH TM5 RATE CONTROLLER 100

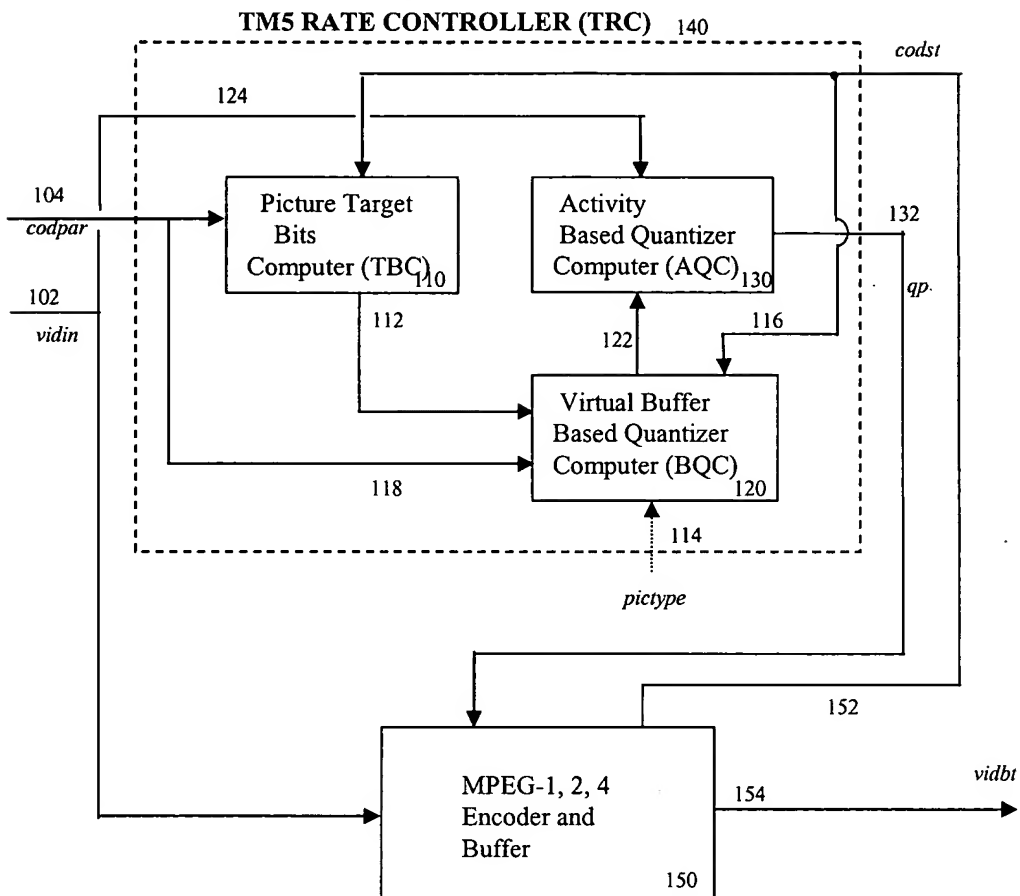


FIG. 1

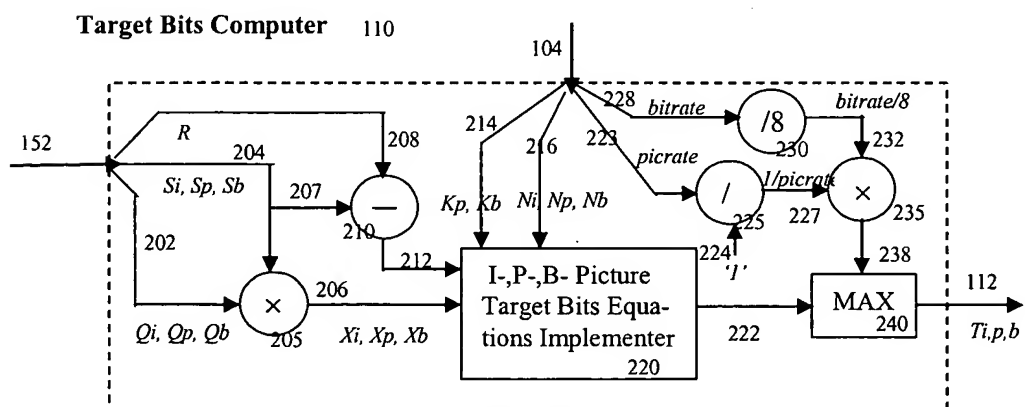
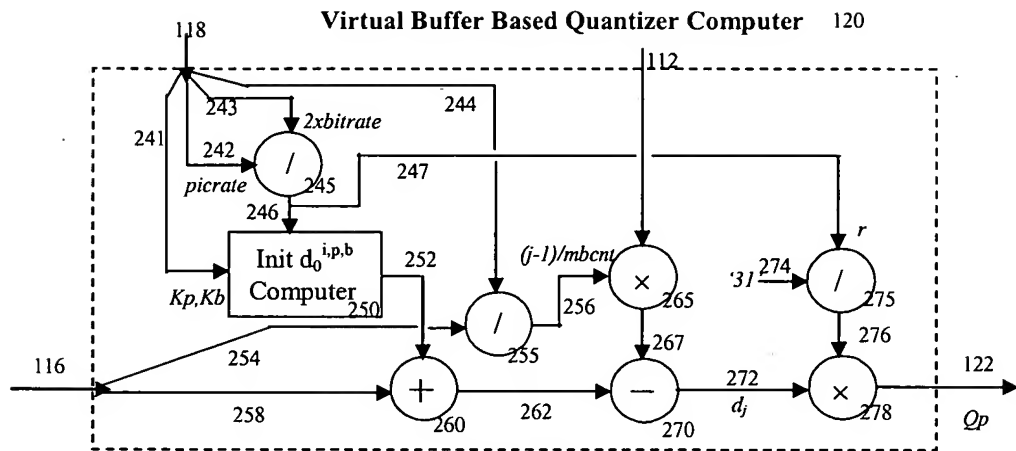
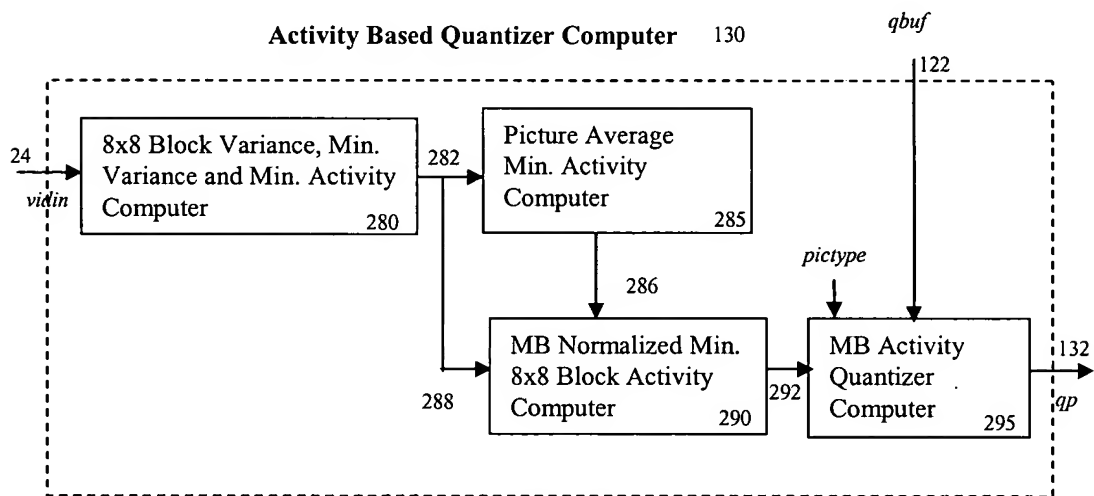


FIG. 2A

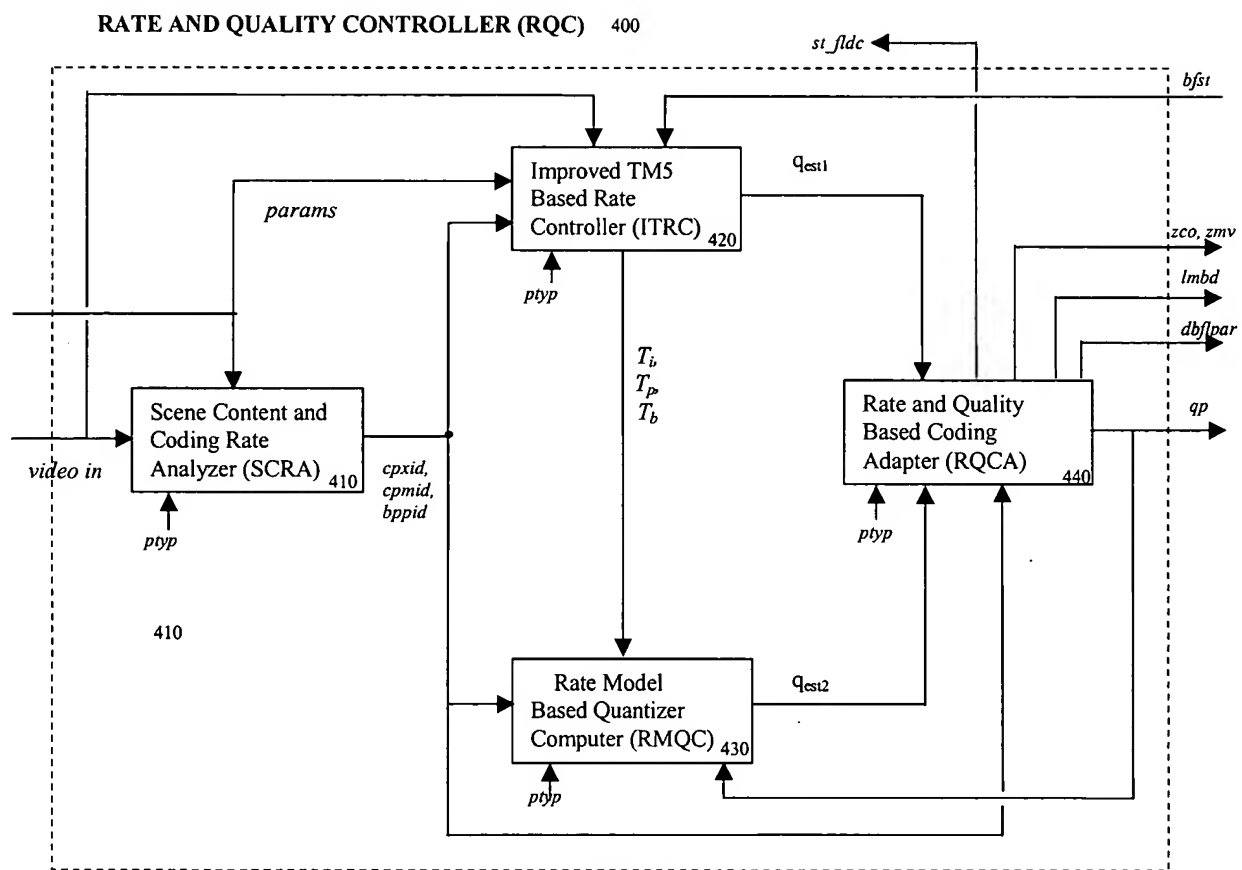


**FIG. 2B**



**FIG. 2C**





**FIG. 4**

# RATE AND QUALITY CONTROLLER - Details

385

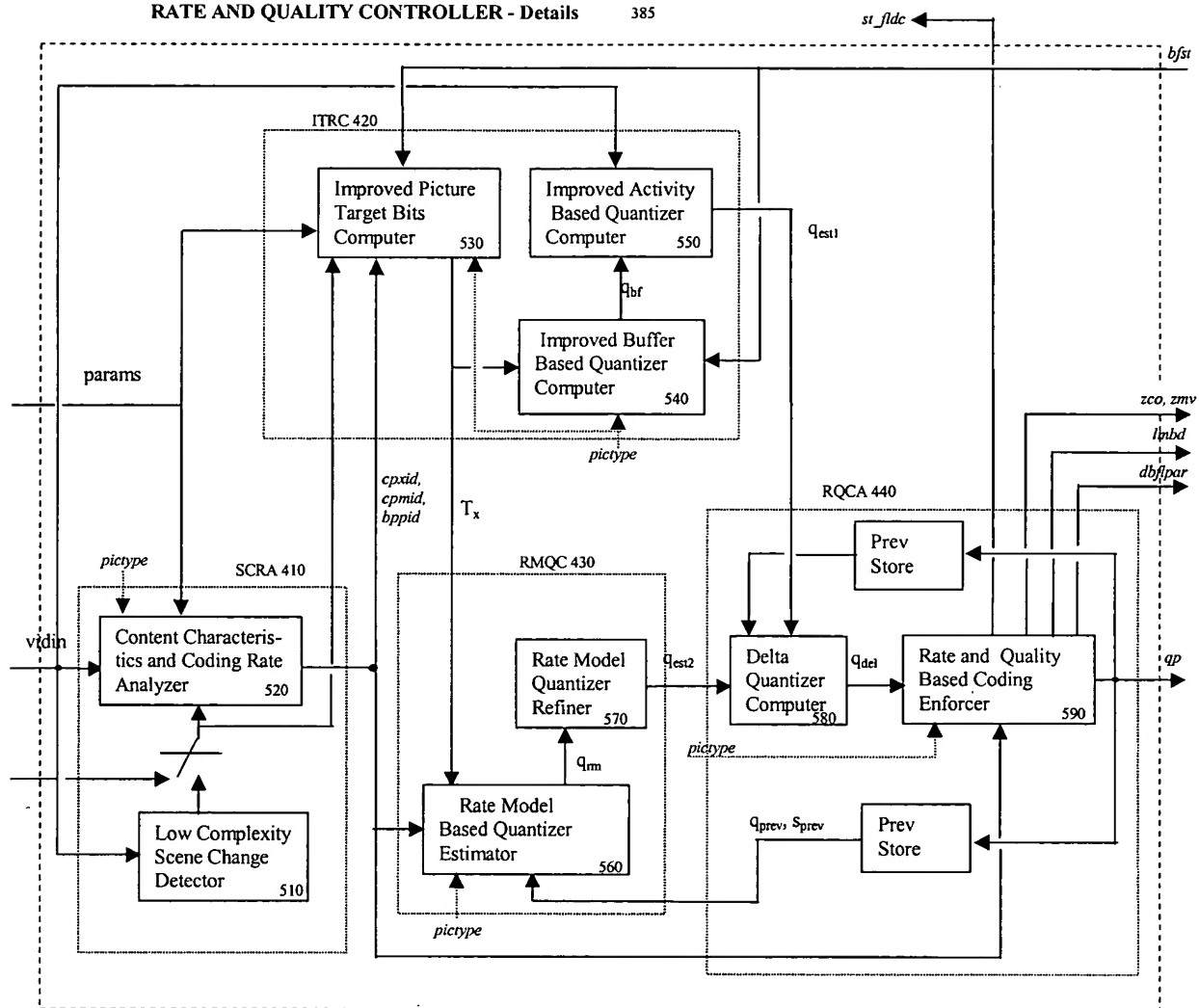


FIG. 5

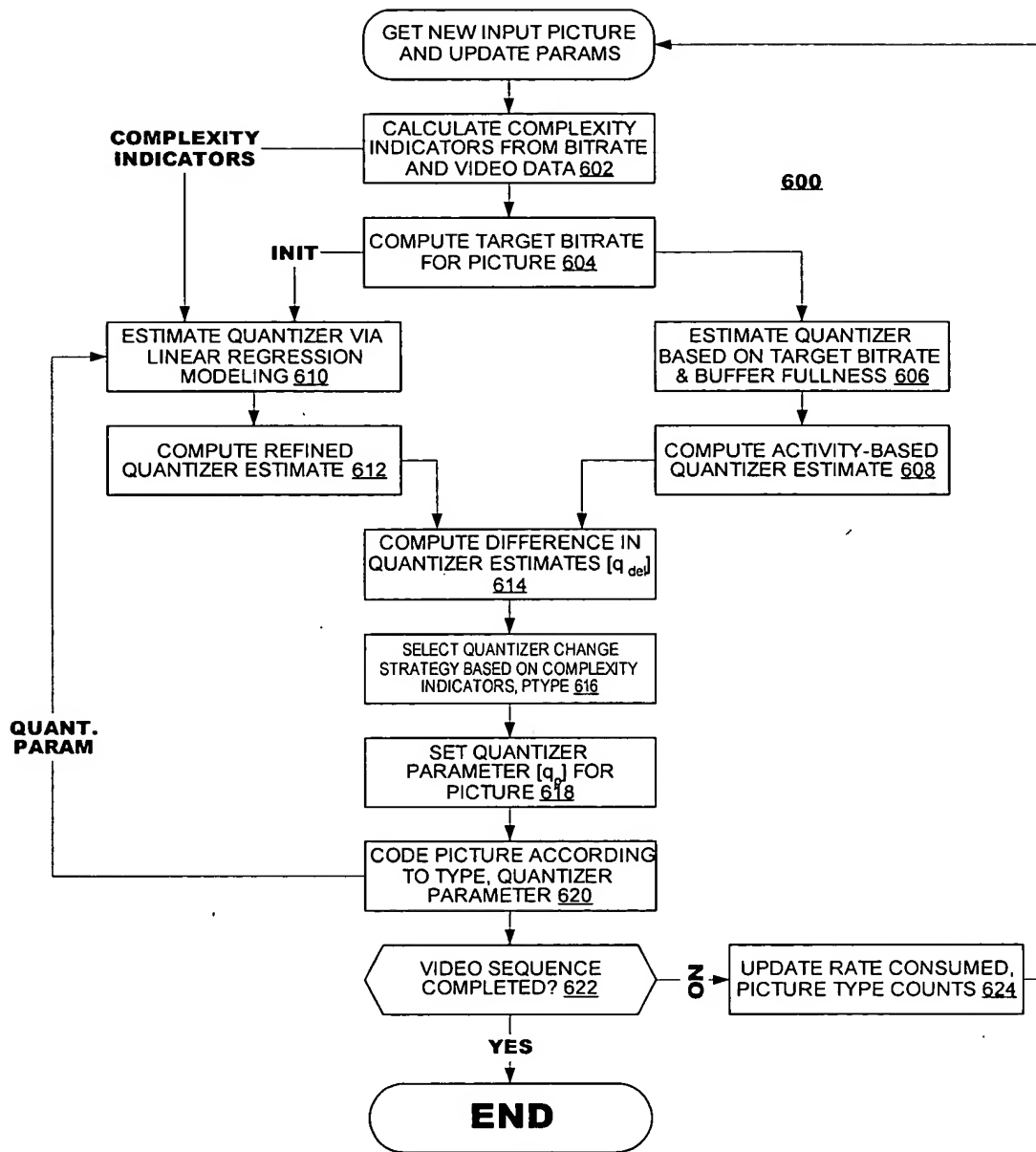
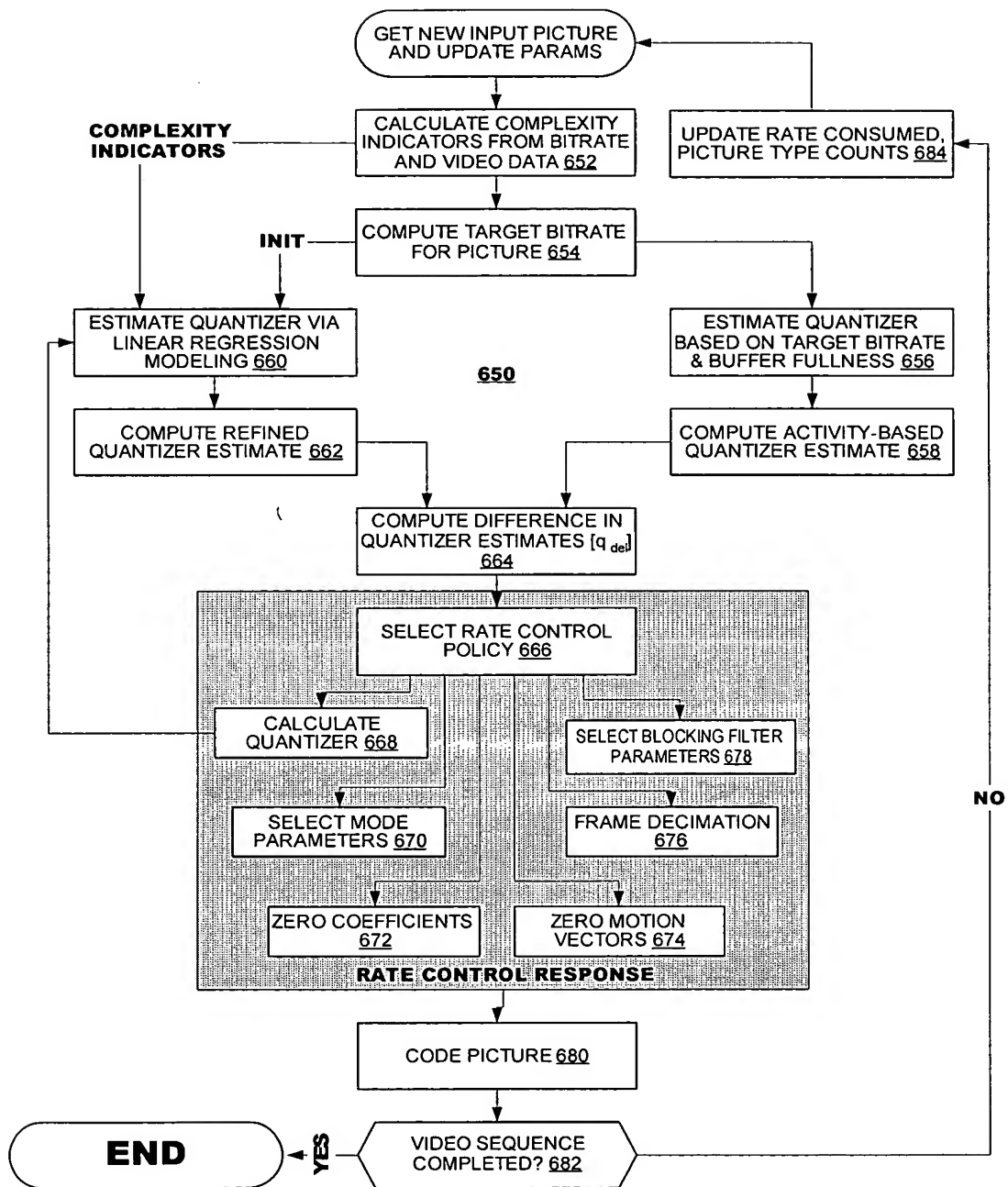


FIG. 6A



700-Video frames coding order when employing 2 B-frame coding structure

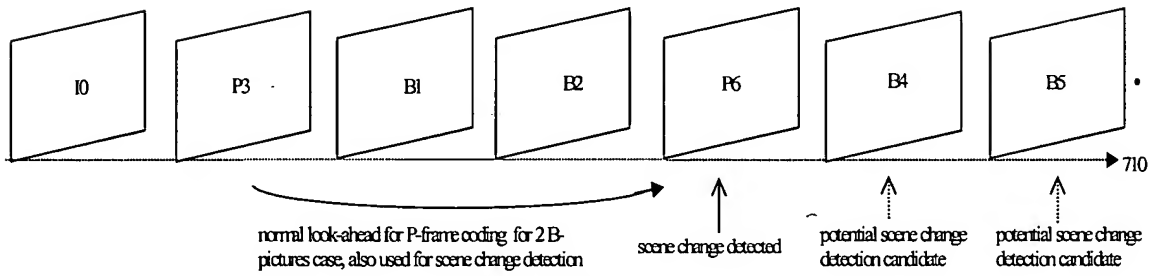


FIG. 7

Low Complexity Scene Change Detector 510

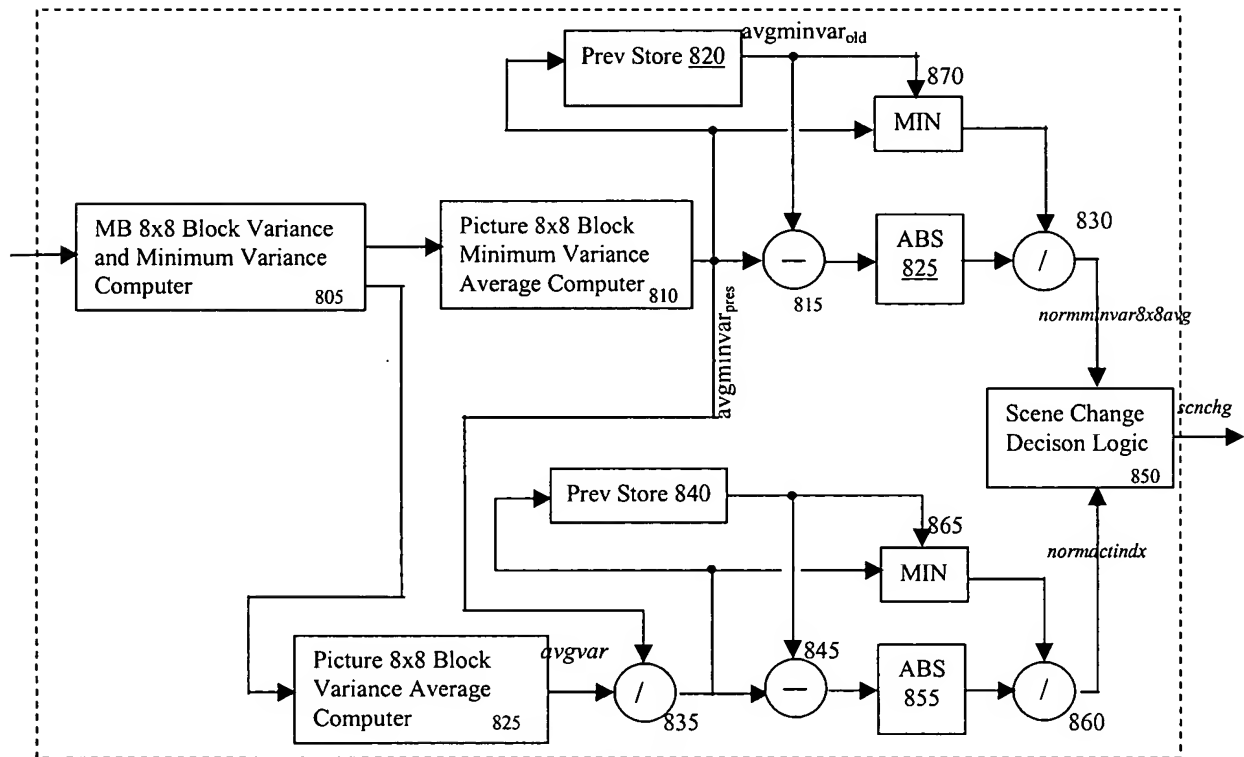
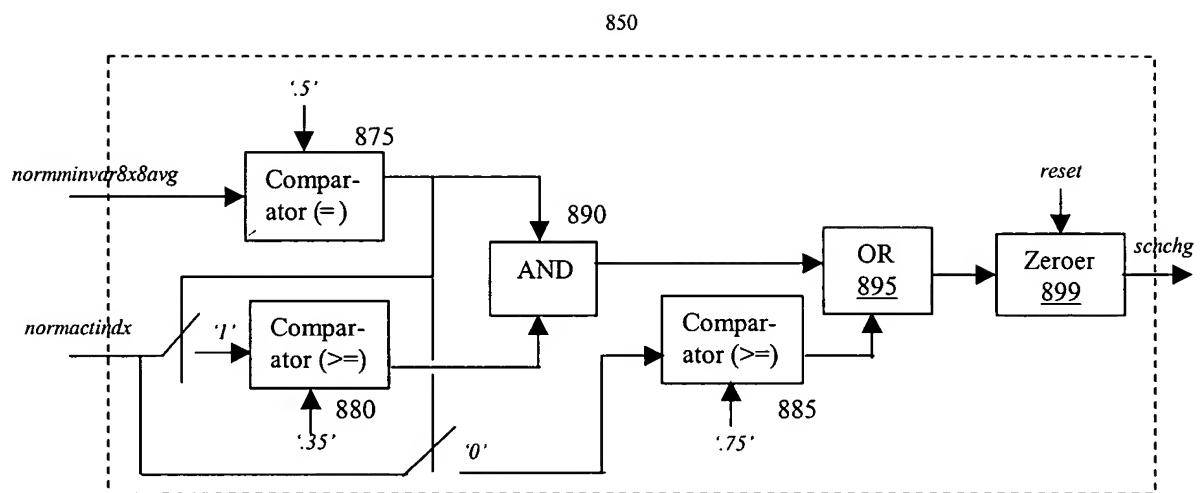
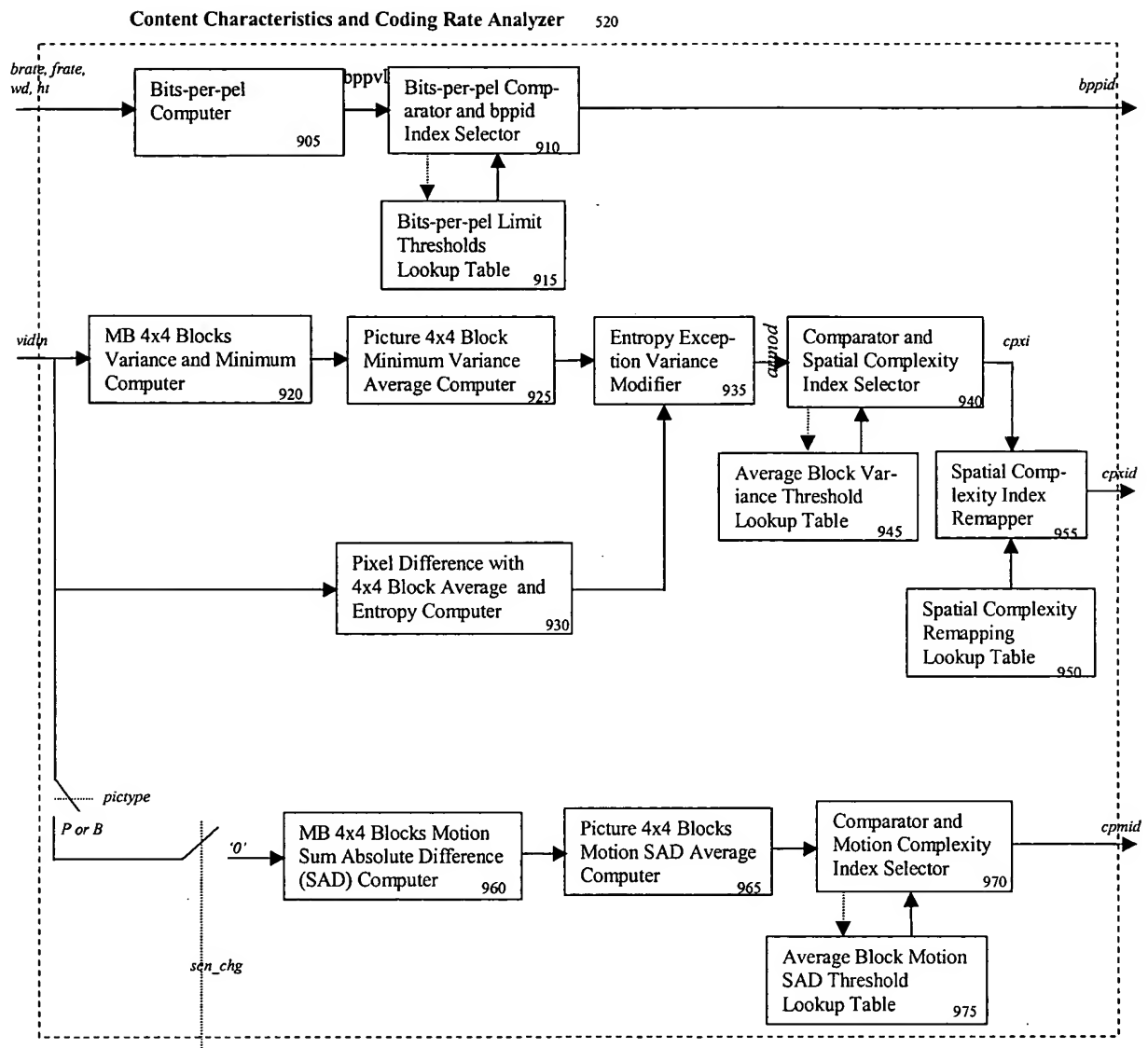


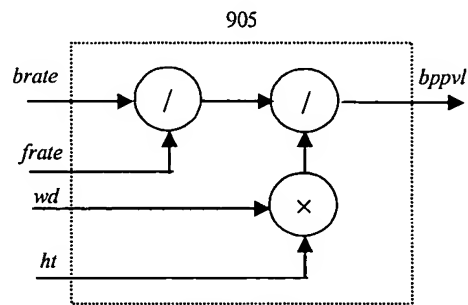
FIG. 8A



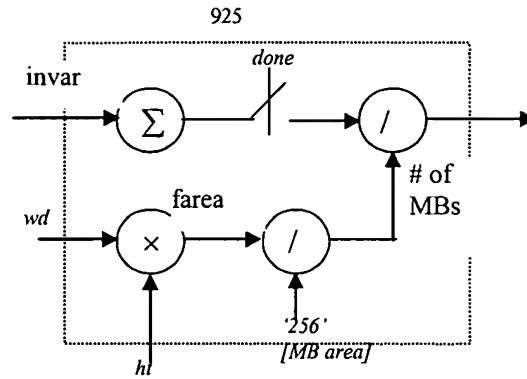
**FIG. 8B**



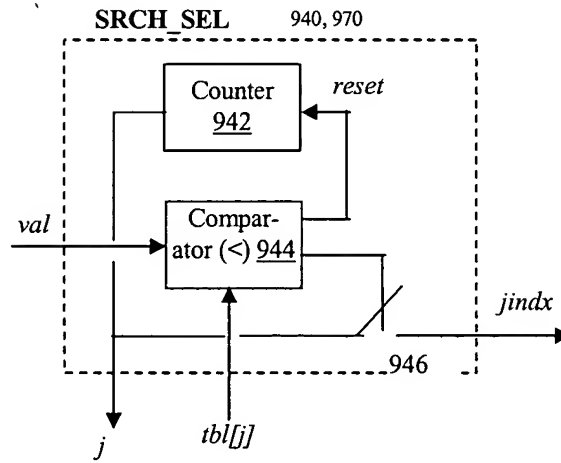
**FIG. 9**



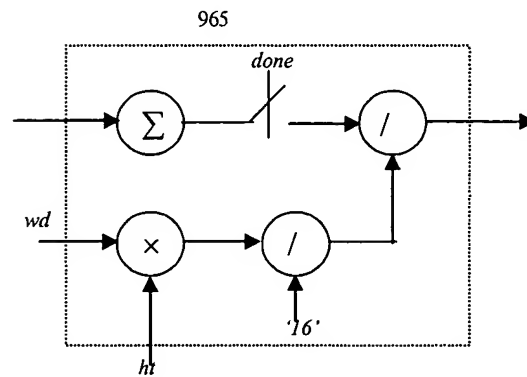
**FIG. 10A**



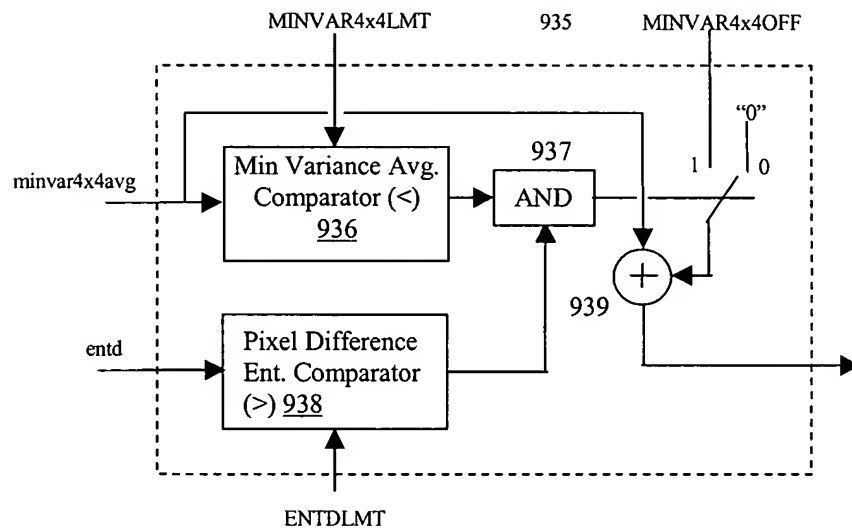
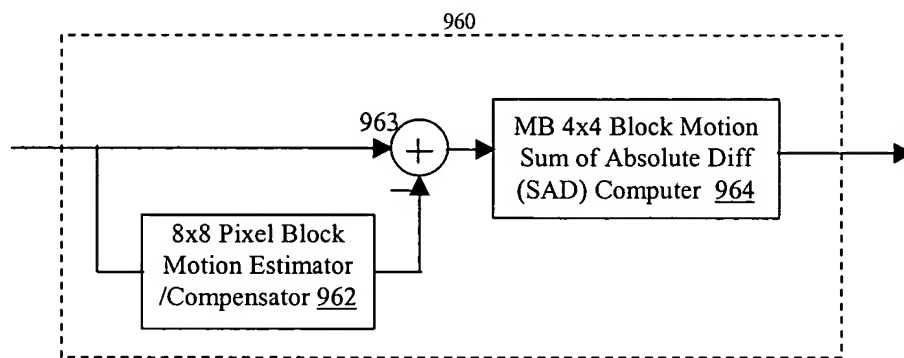
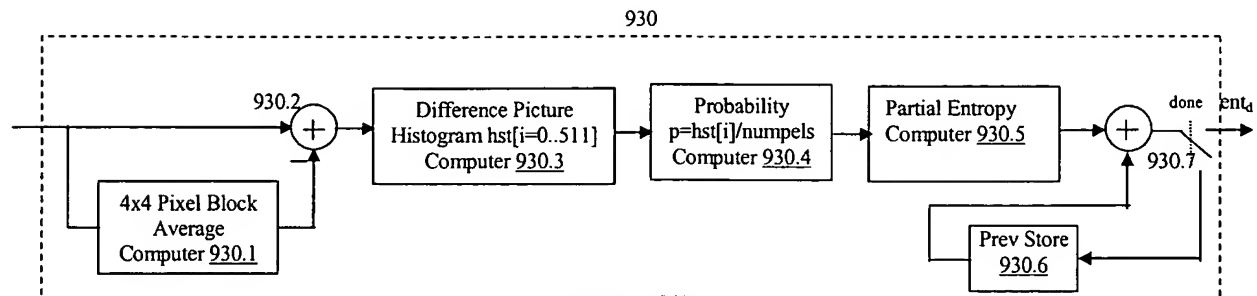
**FIG. 10B**



**FIG. 10C**



**FIG. 10D**



BBPID								
0	1	2	3	4	5	6	7	8
0.01052	0.02104	0.04208	0.08416	0.16832	0.33664	0.67328	1.34656	2.69312

CPID											
0	1	2	3	4	5	6	7	8	9	10	11
1.0	2.0	4.5	8.5	12.5	17.0	22.0	28.0	34.0	41.0	50.0	60.0

12	13	14	15	16	17
71.0	84.0	100.0	120.0	145.0	177.0

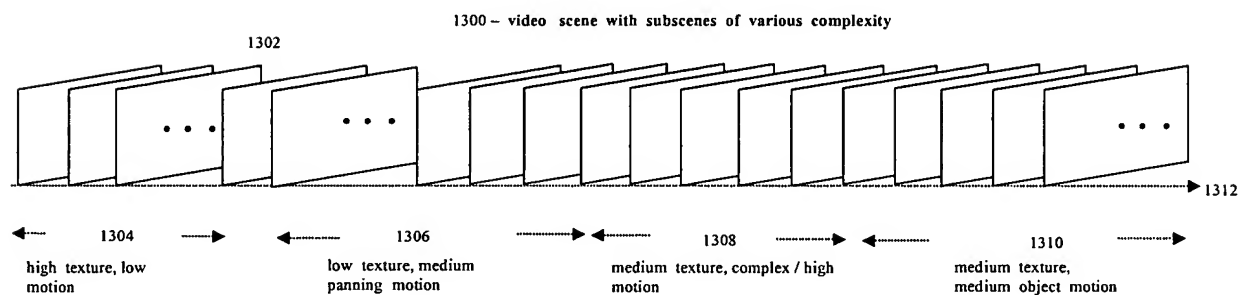
**FIG. 12B - 945**

CPXID								
0	1	2	3	4	5	6	7	8
1	3	5	7	9	11	13	15	17

**FIG. 12C - 955**

CPMID				
0	1	2	3	4
32.0	64.0	112.0	184.0	280.0

**FIG. 12D - 975**



**FIG. 13**

# Improved Picture Target Bits Computer 1400

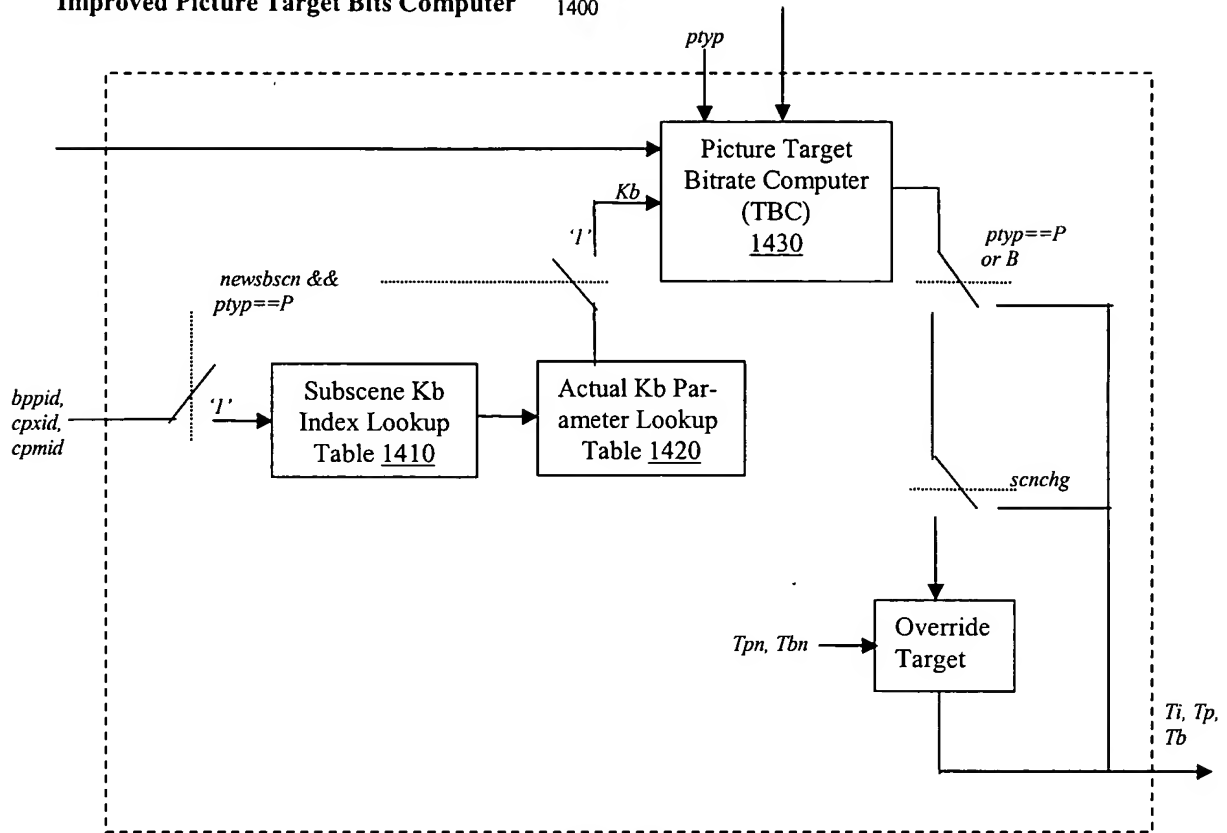


FIG. 14

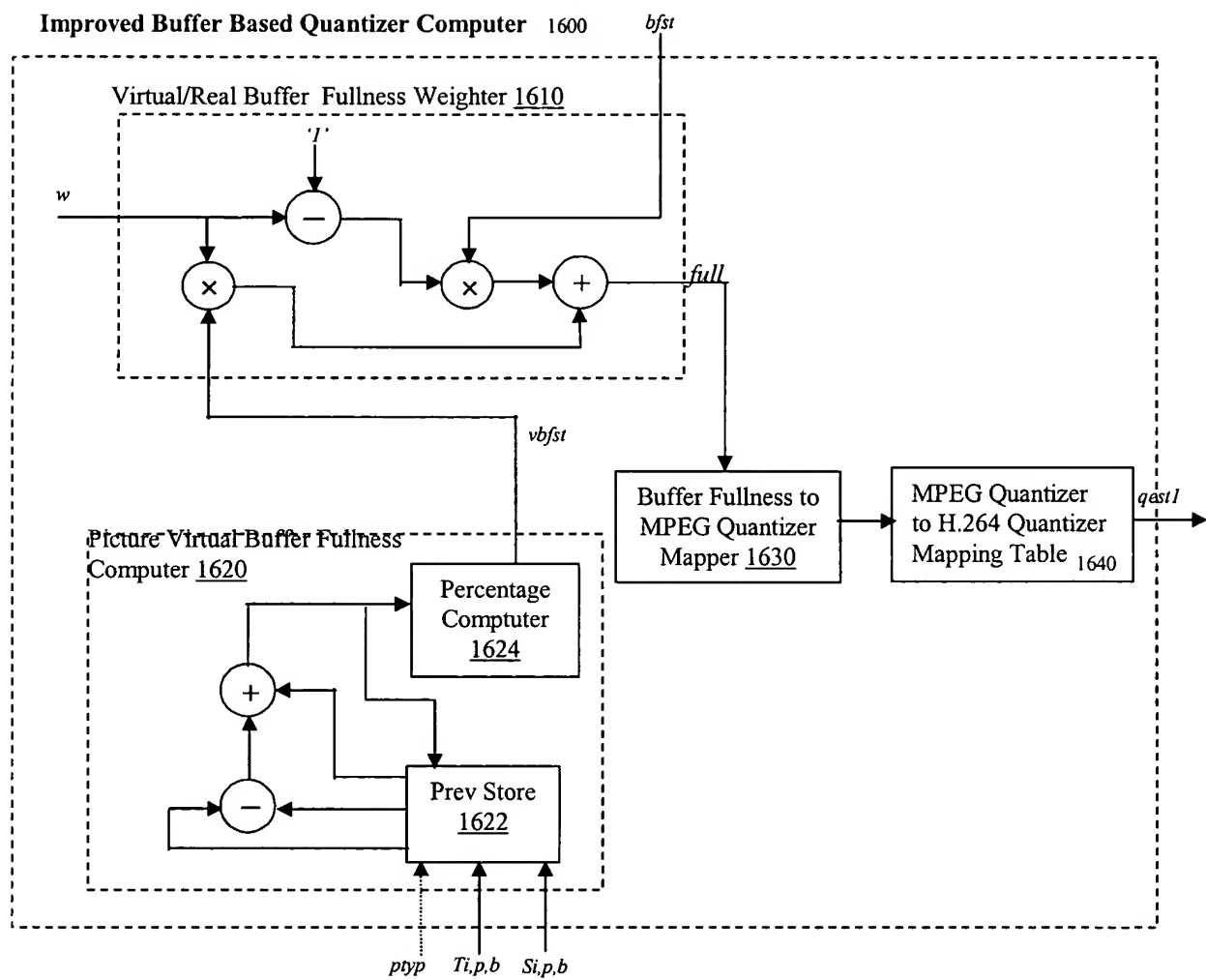
KBID	0	1	2	3	4	5	6
	1.0250	1.2125	1.4000	1.5875	1.7500	1.9375	2.1250

FIG. 15A

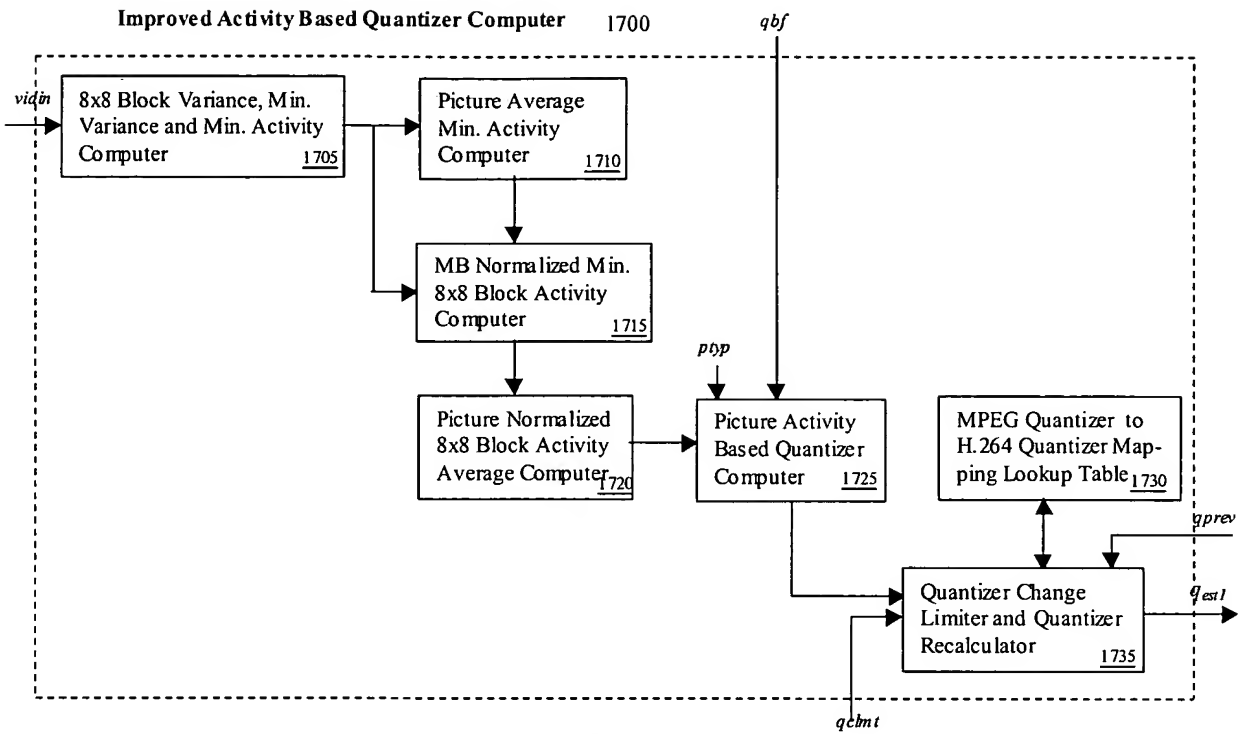
		CPXID									
		0	1	2	3	4	5	6	7	8	
BPPID	CPMID=2	0	2	2	2	3	3	3	4	4	4
	1	2	2	2	2	3	3	3	4	4	
	2	2	2	2	2	2	3	3	3	4	
	3	2	2	2	2	2	2	3	3	3	
	4	2	2	2	2	2	2	2	3	3	
	5	2	2	2	2	2	2	2	2	3	
	6	1	2	2	2	2	2	2	2	2	
	7	1	1	2	2	2	2	2	2	2	
	8	1	1	1	2	2	2	2	2	2	

		CPXID									
		0	1	2	3	4	5	6	7	8	
BPPID	CPMID=1	0	2	2	2	2	2	3	3	3	3
	1	2	2	2	2	2	2	3	3	3	
	2	2	2	2	2	2	2	2	3	3	
	3	2	2	2	2	2	2	2	2	3	
	4	2	2	2	2	2	2	2	2	2	
	5	1	2	2	2	2	2	2	2	2	
	6	1	1	2	2	2	2	2	2	2	
	7	1	1	1	2	2	2	2	2	2	
	8	1	1	1	1	2	2	2	2	2	

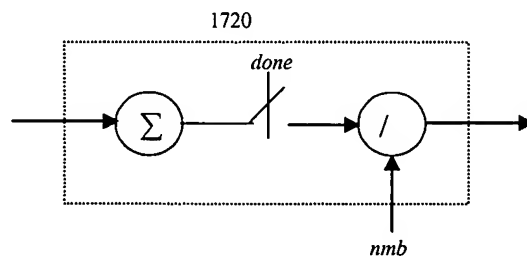
FIG. 15B



**FIG. 16**



**FIG. 17**



**FIG. 18A**

qh264												
0	1	2	3	4	5	6	7	8	9	10	11	12
.250	.281	.315	.353	.396	.446	.500	.561	.623	.707	.794	.891	1.00
13	14	15	16	17	18	19	20	21	22	23	24	25
1.12	1.26	1.41	1.59	1.78	2.00	2.25	2.52	2.82	3.18	3.56	4.00	4.49
26	27	28	29	30	31	32	33	34	35	36	37	38
5.04	5.65	6.35	7.13	8.00	8.98	10.08	11.31	12.70	14.25	16.00	17.96	20.16
39	40	41	42	43	44	45	46	47	48	49	50	51
22.63	25.39	28.51	32.00	35.92	40.31	45.25	50.80	57.02	64.00	71.83	80.64	90.51

FIG. 18B

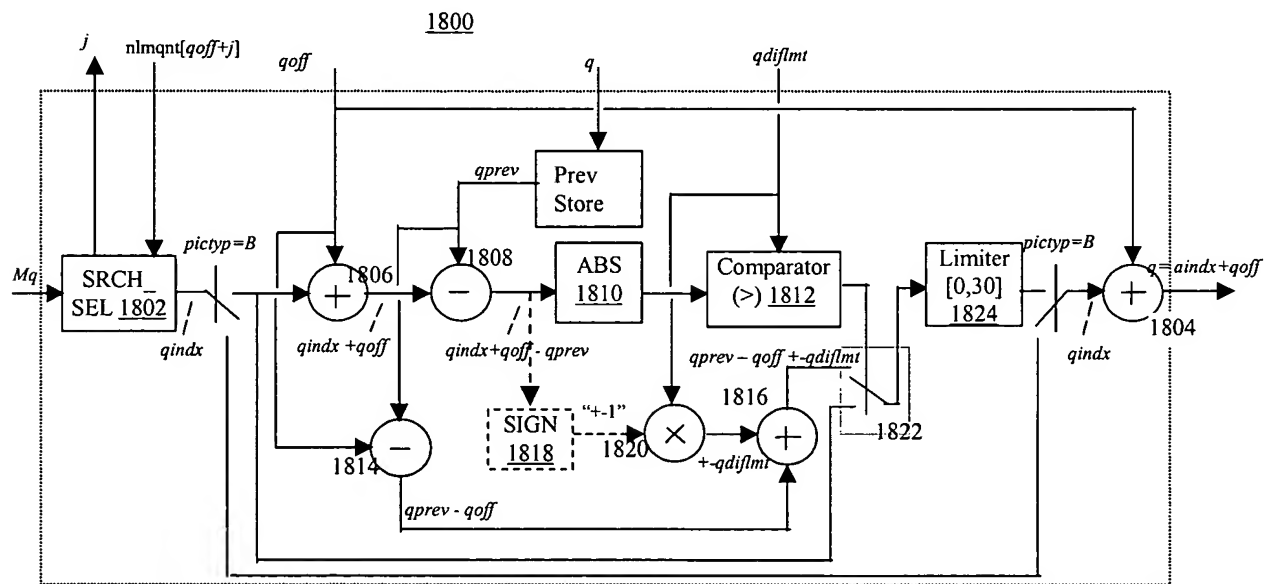
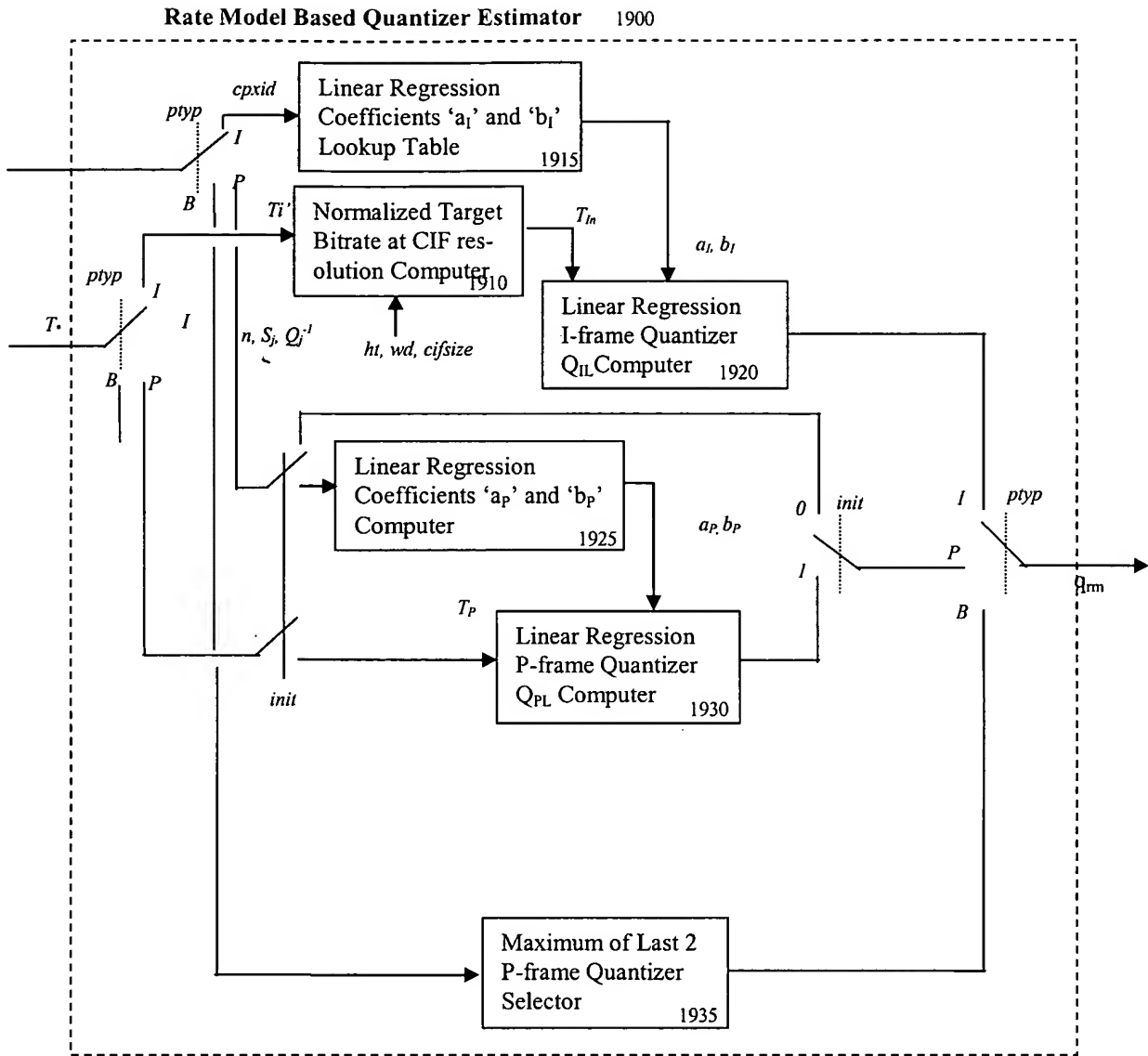


FIG. 18C



**FIG. 19**

CPID					
0	1	2	3	4	5
-68134.59213	-87003.98467	-106202.60465	-125401.23463	-133506.23620	-141558.73699
6	7	8	9	10	11
-149611.24778	-151588.19751	-220858.39744	-293963.81117	-254808.46319	-215653.11522
12	13	14	15	16	17
-207487.50918	-1993321.90315	-191155.48428	-182989.06541	-178235.75132	-169521.36854

**FIG. 20A**

CPID					
0	1	2	3	4	5
3313453.21342	3993567.19336	4565785.16255	5138003.13174	5715464.15501	6104194.66665
6	7	8	9	10	11
6492925.17829	6678722.15535	9084900.80067	11517856.77655	10611605.70466	9705354.63278
12	13	14	15	16	17
9777071.15962	9848787.68646	9920504.21330	9992220.74014	10623397.89991	11435042.39299

FIG. 20B

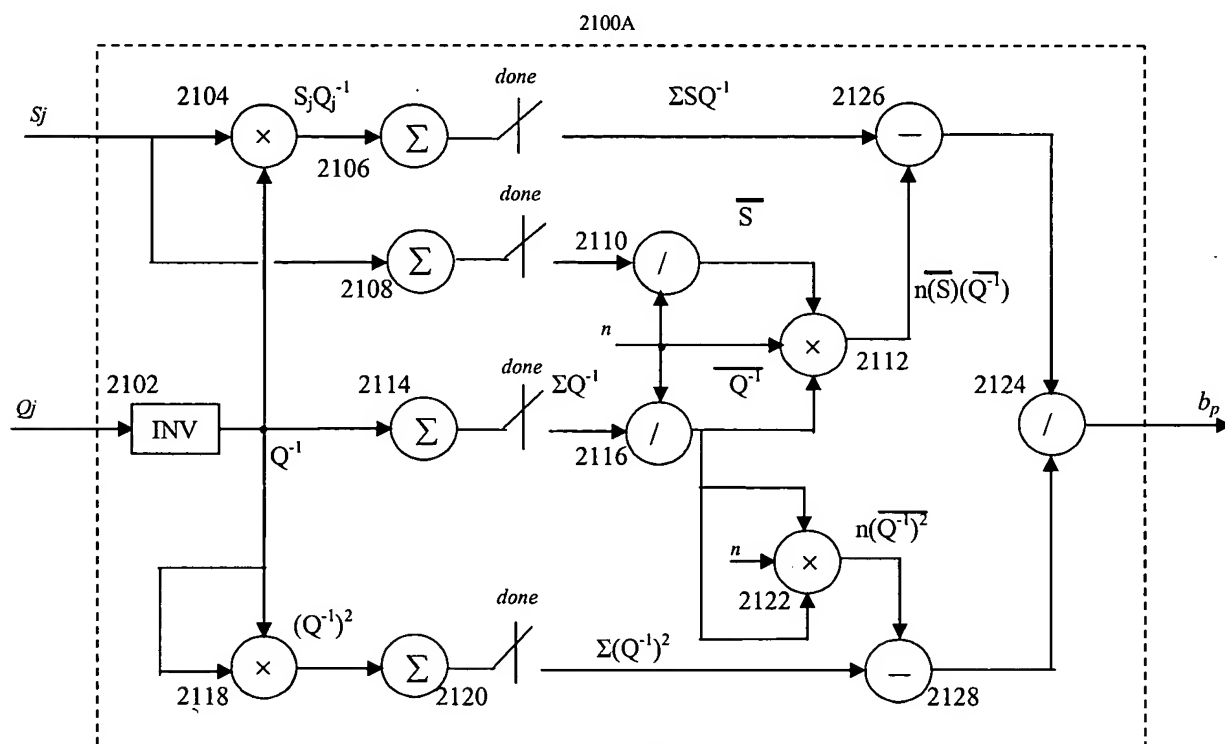
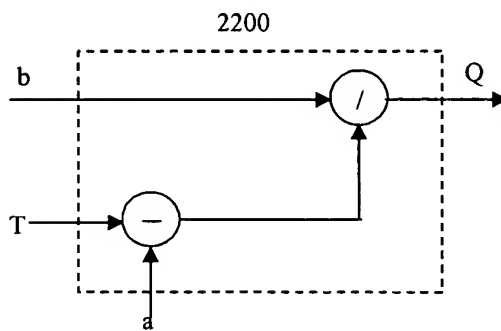
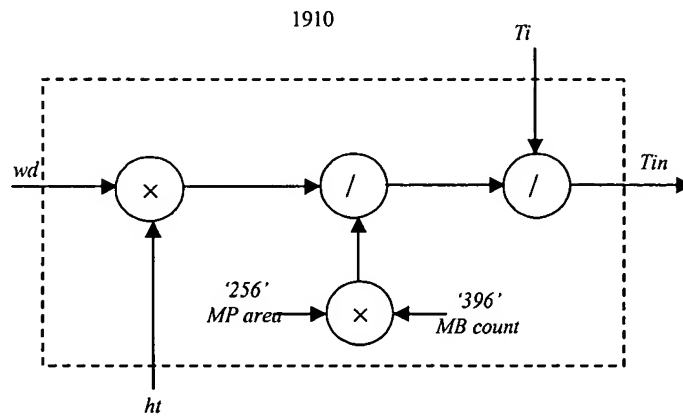
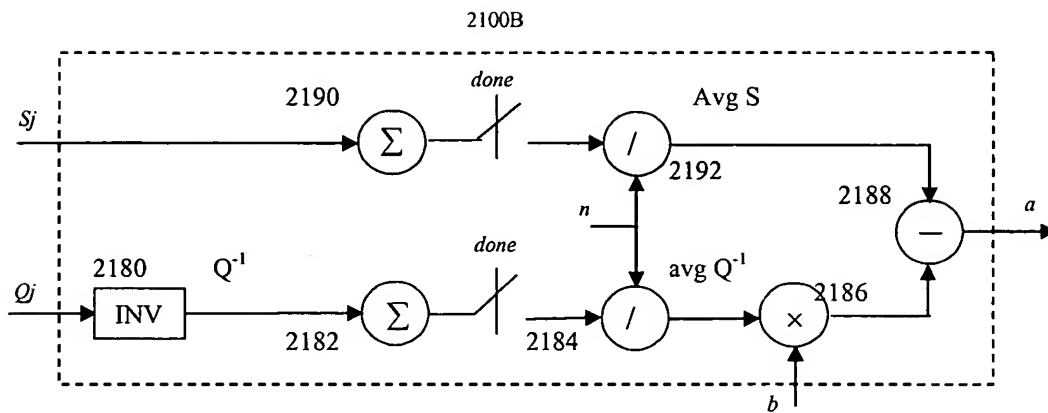
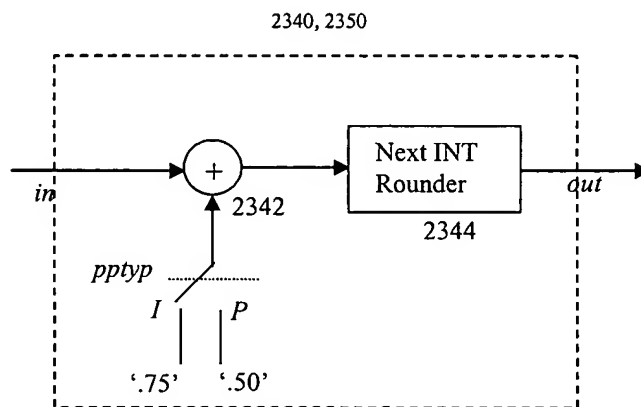
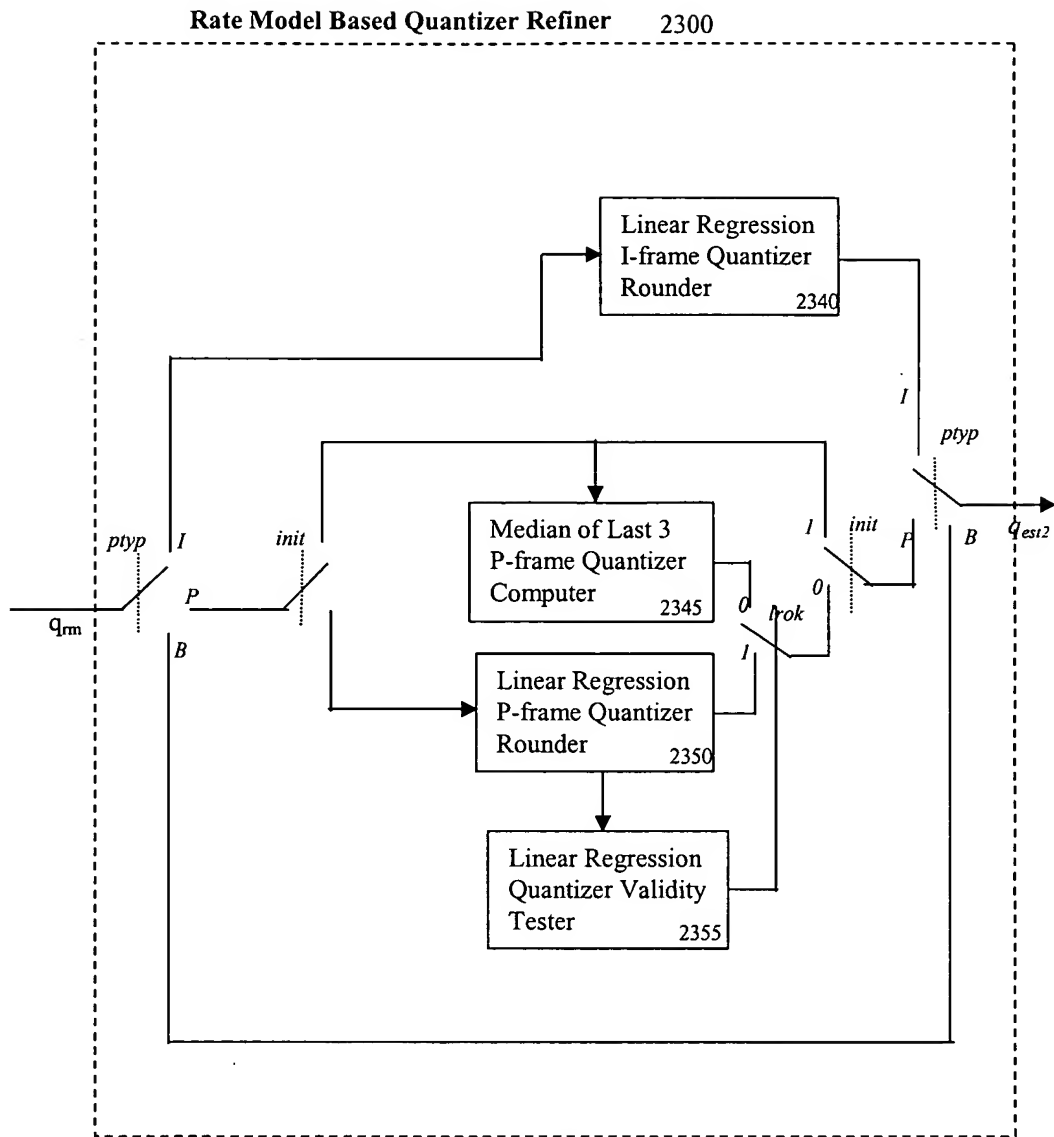


FIG. 21A





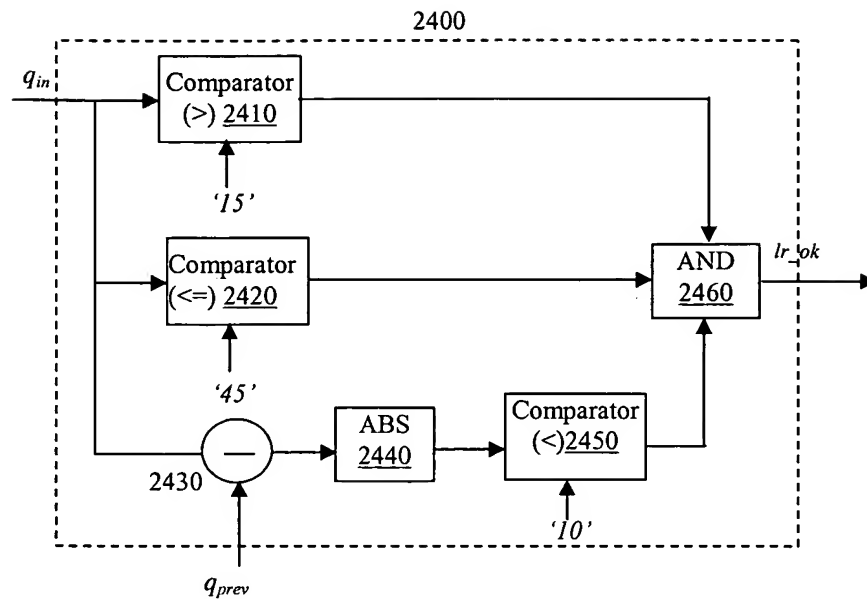


FIG. 24B

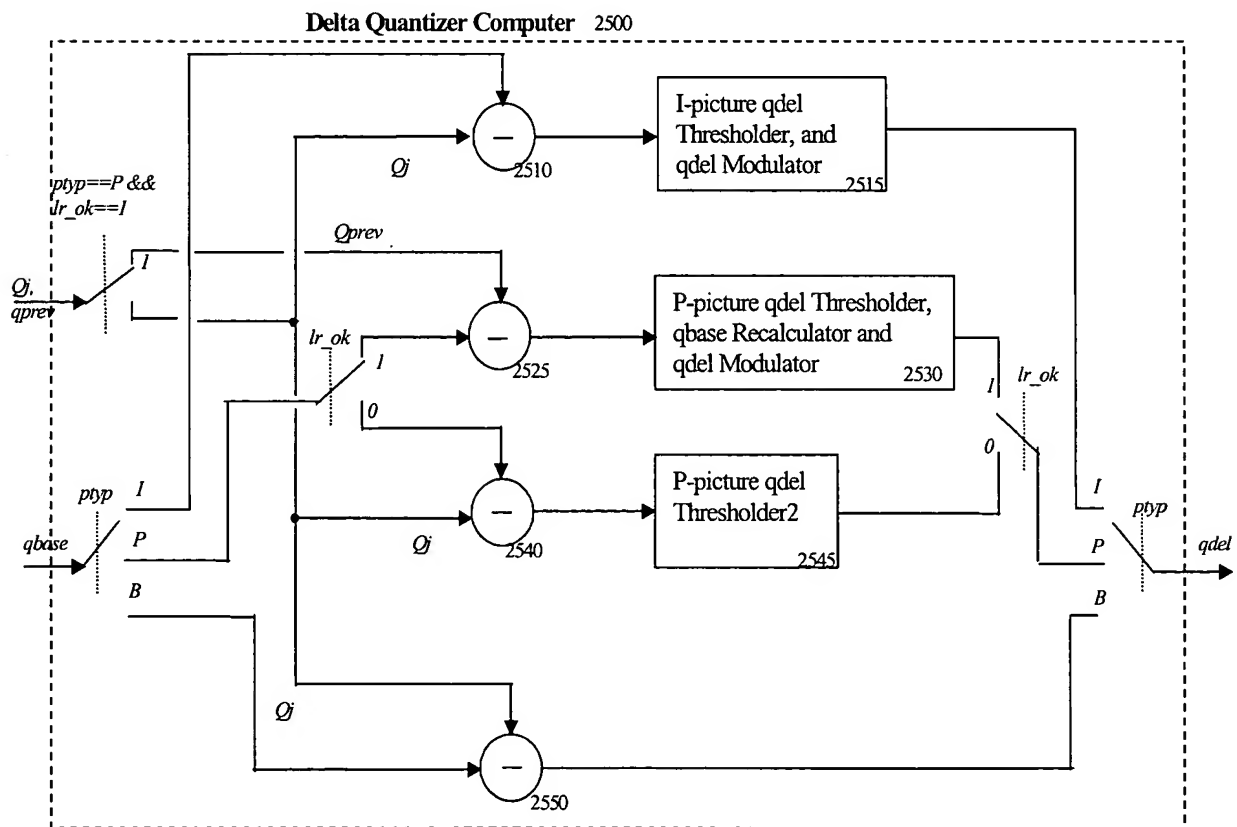


FIG. 25

2515

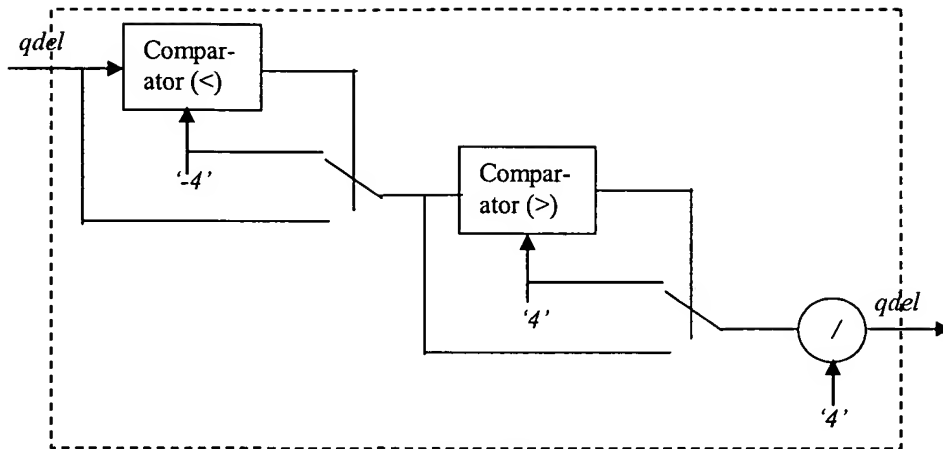


FIG. 26A

2530

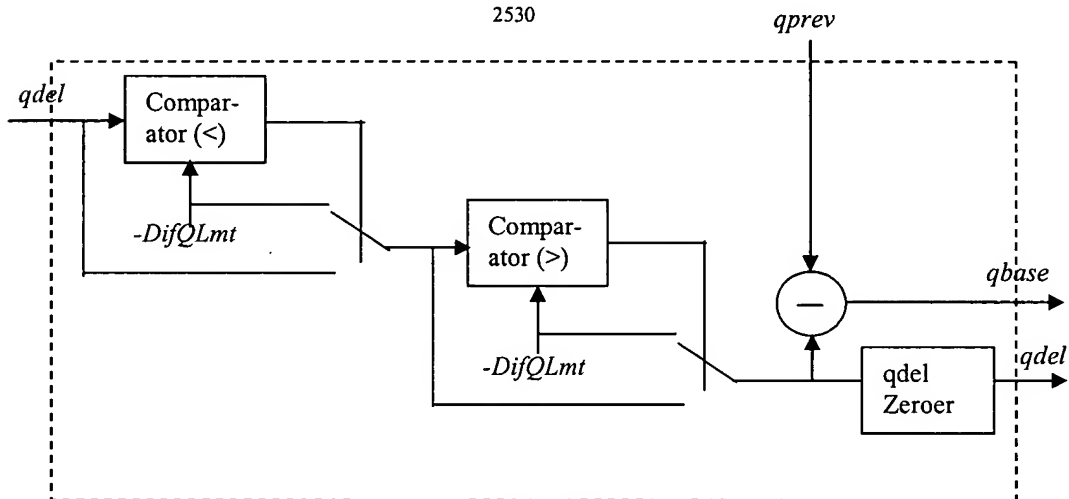


FIG. 26B

2545

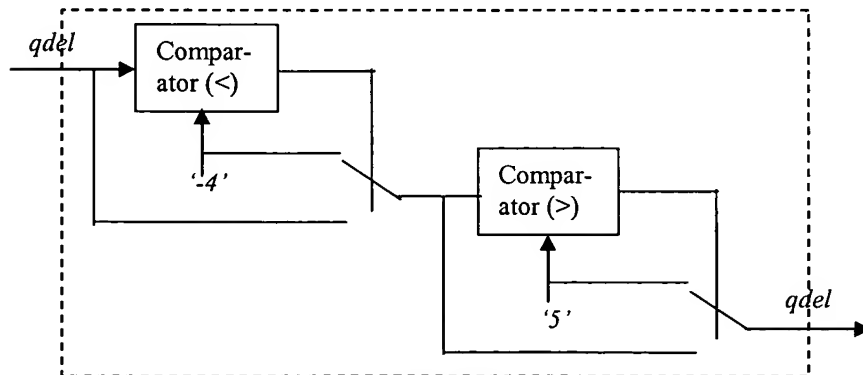
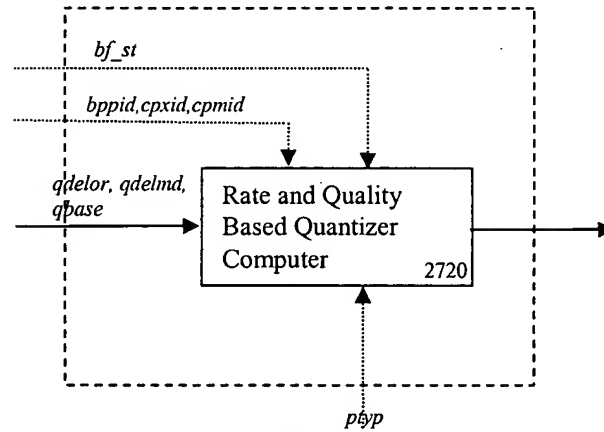


FIG. 26C

**Rate and Quality Based Coding Enforcer** 590/2710



**FIG. 27**

# Rate and Quality Based Quantizer Computer 2800

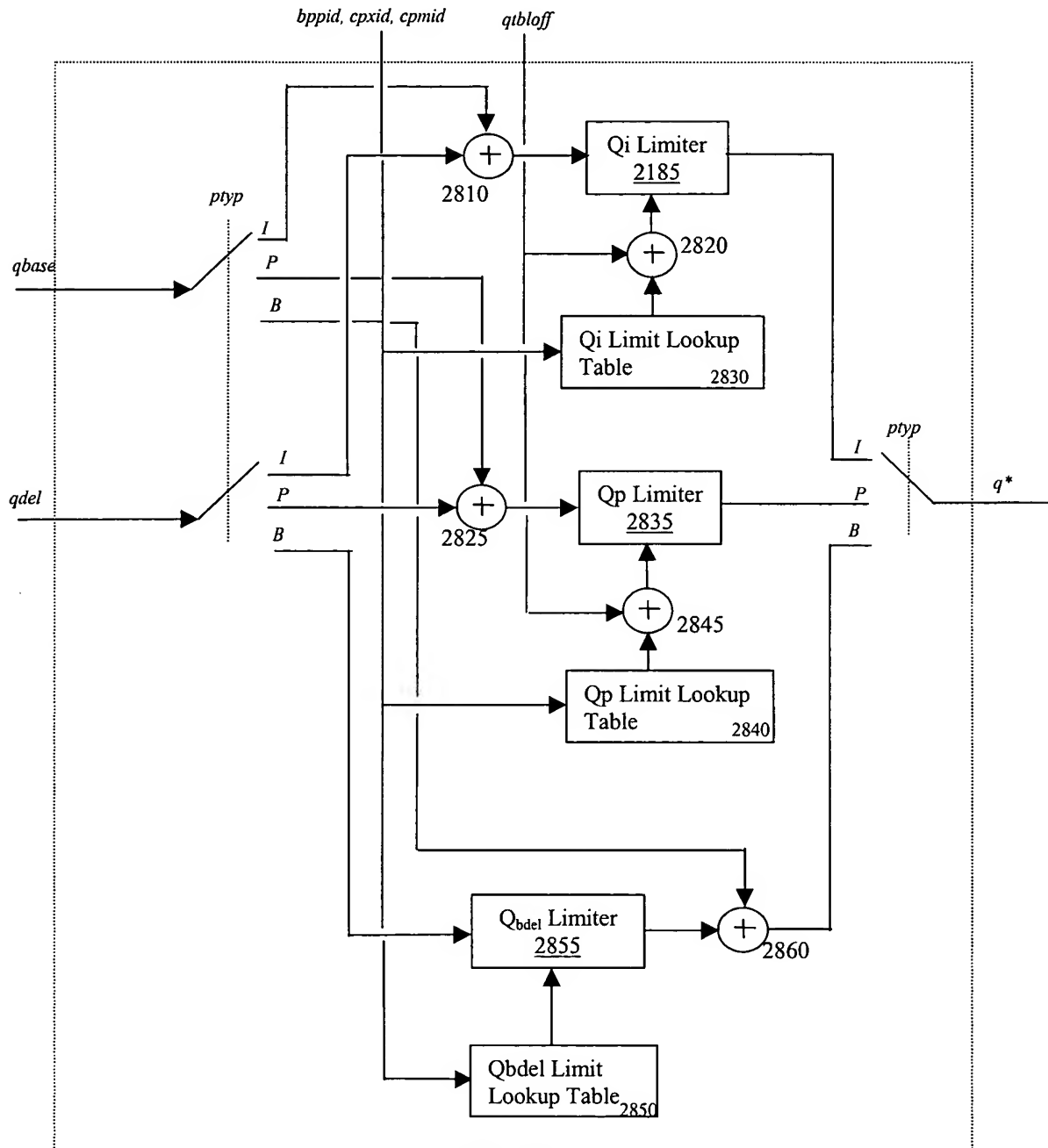


FIG. 28

BPPID	CPXID								
	0	1	2	3	4	5	6	7	8
	0	10	11	12	13	14	15	16	17
	1	9	10	11	12	13	14	15	16
	2	8	9	10	11	12	13	14	15
	3	7	8	9	10	11	12	13	14
	4	6	7	8	9	10	11	12	13
	5	5	6	7	8	9	10	11	12
	6	4	5	6	7	8	9	10	11
	7	3	4	5	6	7	8	9	10
	8	2	3	4	5	6	7	8	9

FIG. 29A

BPPID	CPXID								
	0	1	2	3	4	5	6	7	8
	0	10	11	12	13	14	15	16	17
	1	9	10	11	12	13	14	15	16
	2	8	9	10	11	12	13	14	15
	3	7	8	9	10	11	12	13	14
	4	6	7	8	9	10	11	12	13
	5	5	6	7	8	9	10	11	12
	6	4	5	6	7	8	9	10	11
	7	3	4	5	6	7	8	9	10
	8	2	3	4	5	6	7	8	9

FIG. 29B

BPPID	CPXID								
	0	1	2	3	4	5	6	7	8
	0	2	2	2	3	3	3	4	4
	1	1	2	2	2	3	3	3	4
	2	1	1	2	2	2	3	3	3
	3	1	1	1	2	2	2	3	3
	4	1	1	1	1	2	2	2	3
	5	0	1	1	1	2	2	2	2
	6	0	0	1	1	1	2	2	2
	7	0	0	0	1	1	1	2	2
	8	0	0	0	0	1	1	1	2

FIG. 29C

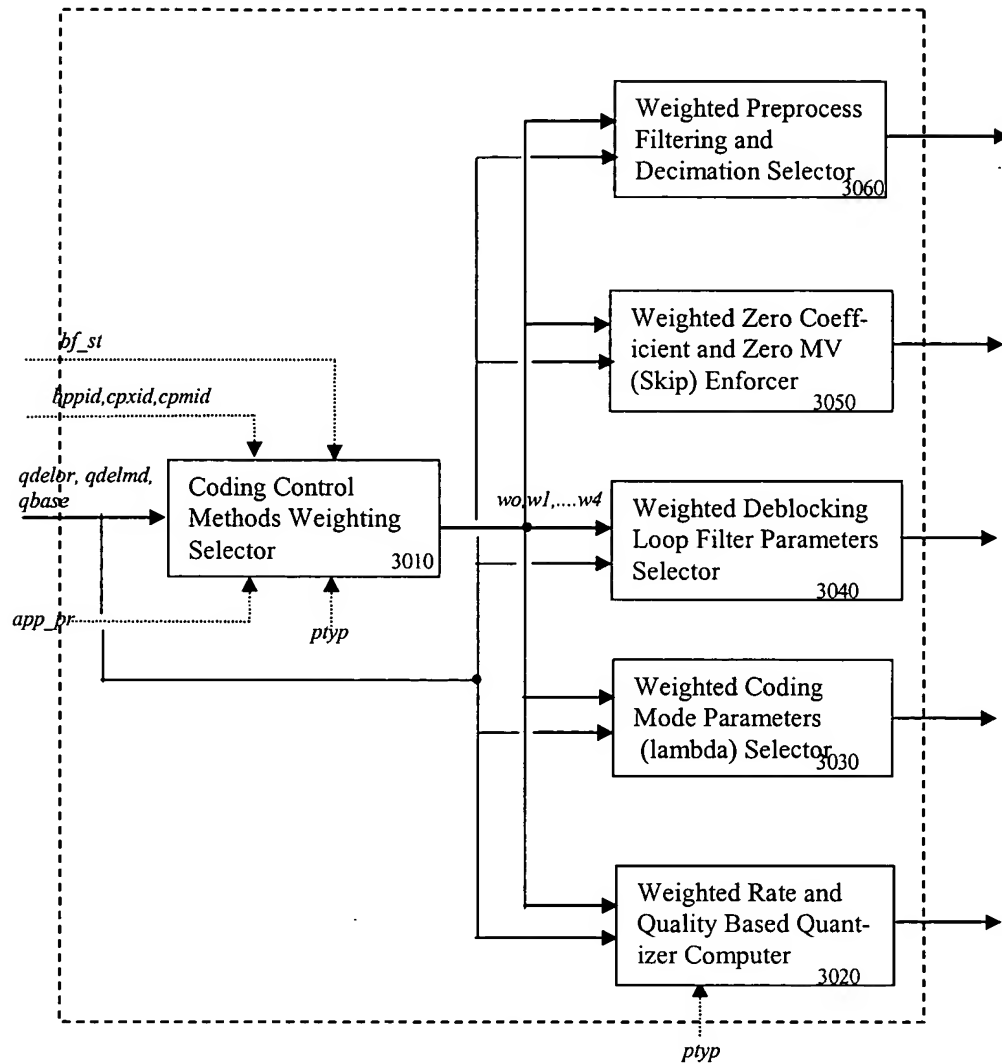


FIG. 30

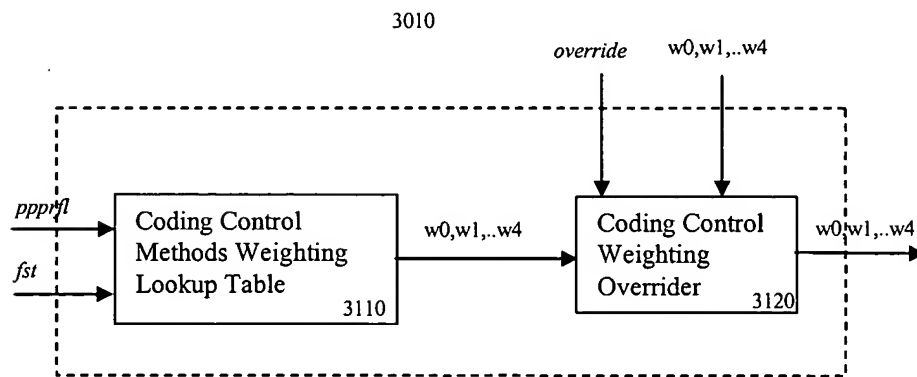


FIG. 31

[illegible]

FIG. 32

## Weighted Rate and Quality Based Quantizer Computer 3020

